The Treatment of Severe Mental Illness: An Implementation and Evaluation of Assertive Community Treatment

DNP Final Project

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By

Amy Becher-Smith, MS, MSW, PMHNP-BC, FNP-BC

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DNP Project Committee:

Margaret Graham, PhD, APRN-CNP, FAANP, FNAP, FAAN

Alice M. Teall, DNP, APRN-CNP, FAANP

Sharon Tucker, PhD, RN, FAAN

Abstract

Background: Patients with severe mental illness (SMI) face widespread challenges in life, including reduced life expectancy of up to 30 years less than the general population; high comorbid health conditions; lifelong prevalence of substance use disorder of 50%; more frequent hospitalizations; increased risk of homelessness; social isolation and loneliness; and reduced quality of life. *Aims:* The purpose of this DNP project was to evaluate the implementation of a new Assertive Community Treatment (ACT) program as the standard of care in serving a new panel of patients with SMI receiving services at Community for New Direction. *Method:* The Tool for Measurement of Assertive Community Treatment (TMACT) was used to evaluate the ACT program fidelity. By using this tool, the author is able to identify a "snapshot" of the ACT team structure, staffing, and practices to compare with the defined ACT model to determine program fidelity. *Results:* The results of the TMACT fidelity tool revealed both strengths and weaknesses of the CND ACT program. Strengths included low ratio of consumer to staff, consistency and communication during team meetings, and the team's competency in delivering evidence-based practice of integrated dual disorders treatment. Weaknesses included the limited timeframe of the program, vacancies in team positions, and low rates of contact with natural supports. *Conclusions:* By using the ACT program, patients suffering from SMI were able to get the necessary team support to maintain functioning in the community. By evaluating the program fidelity, a roadmap was created to guide the quality improvement plan for the organization moving forward.

The Treatment of Severe Mental Illness: An Outcome Evaluation of Assertive Community Treatment

Section One: Nature of the Problem

Introduction to the Problem

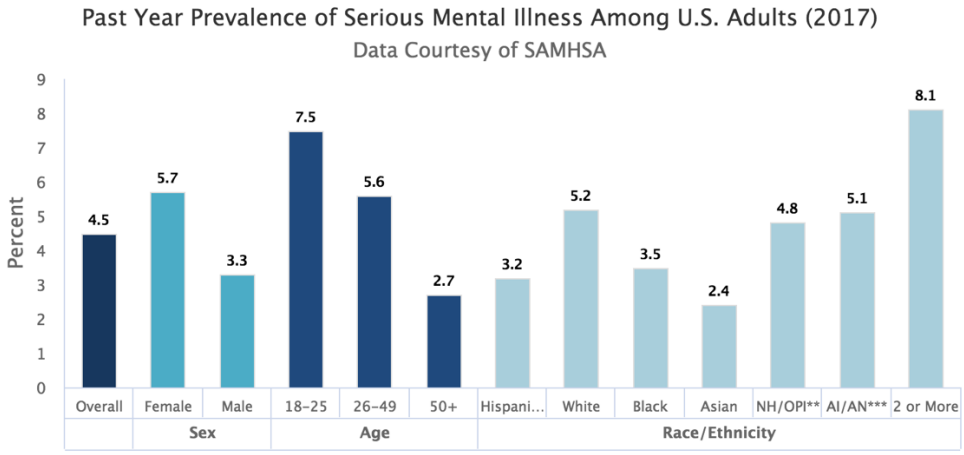
Patients with severe mental illness (SMI) face widespread challenges in life, including reduced life expectancy of up to 30 years less than the general population; high comorbid health conditions; lifelong prevalence of substance use disorder of 50% (Rush & Koegl, 2008); more frequent hospitalizations (Olivares, Sermon, Hemels, & Schreiner, 2013); increased risk of homelessness (Drake, Bartel, Teague, Noordsy, & Clark, 1993); social isolation and loneliness (Scheyett, Pettus-Davis, & Cuddeback, 2010) and reduced quality of life (Marshall & Lockwood, 2011). SMI is defined as "a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities" (National Institute of Mental Health, 2019). SMI includes the diagnoses schizophrenia-spectrum disorders, bipolar-spectrum disorders, major depressive disorders, and other mental health disorders that cause serious impairment. The World Health Organization estimates one in four people will be affected by mental illness or neurological disorders in their lifetime, with 450 million currently suffering from mental health conditions, placing mental disorders as a leading cause of illness and disability worldwide (WHO, 2001).

According to National Institute of Mental Health (2019):

- In 2017, there were an estimated 11.2 million adults aged 18 or older in the United States with SMI. This number represents 4.5% of all U.S. adults.
- The prevalence of SMI was higher among women (5.7%) than men (3.3%). Refer to Table 1.
- Young adults aged 18-25 years had the highest prevalence of SMI (7.5%) compared to adults aged 26-49 years (5.6%) and aged 50 and older (2.7%).
- The prevalence of SMI was highest among the adults reporting two or more races (8.1%) followed by white adults (5.2%). The prevalence of SMI was lowest among Asian adults (2.4%).

Table 1

Past Year Prevalence of Serious Mental Illness Among U.S. Adults



Note: The variation in gender, age of prevalence, and race by U.S. adults 18 or older with serious mental illness. Adapted from "Past Year Prevalence of Any Mental Illness Among U.S. Adults" by National Institute of Health, 2019

The Mental Health Authorities in the state of Ohio are committed to persons with SMI by consistently investing in evidenced-based treatment, such as Assertive Community Treatment (ACT) for patients most at-risk for homelessness, psychiatric hospitalization, and institutional recidivism (Kubek, 2013). This commitment is illustrated by the Ohio Department of Mental Health and Addiction Services' (OhioMHAS) ongoing funding to expand the integrated behavioral healthcare approaches of ACT to decrease high cost services, improve independent living and increase rates of retention in treatment for individuals with SMI. In Franklin County, Ohio, during 2008-2019, there were four ACT programs provided through Community Mental Health Centers (CMHC). In April of 2019, one of the four CMHC agencies went out of business leaving 1500 patients with SMI without services. The Alcohol, Drug and Mental Health (ADAMH) Board of Franklin County quickly responded to this loss by issuing a request for proposals (RFP) to fill the void. Community for New Direction (CND), a non-profit CMHC on the near East side of Columbus, was one of the providers who responded to the community need by expanding their services to individuals with SMI requiring high intensity services to prevent re-hospitalization and promote recovery.

According to the United States Census Bureau (2017), the population of Franklin County, Ohio is 1.3 million people with a 12.6 percent growth since 2010. At 4.5 percent of the population estimated to have SMI, approximately 58,500 people in Franklin County, Ohio require specialized psychiatric services. The Franklin County Task Force on Psychiatric Crisis and Emergency System (PCES) is a collaboration of the Central Ohio Hospital Council (COHC), Central Ohio Trauma Systems, and Franklin County ADAMH Board, funded by ADAMH and The Columbus Foundation. This Task Force examines major providers of psychiatric crisis and emergency systems in Franklin County and works to identify best-practice strategies and reviews evidence-based approaches for the delivery of psychiatric emergency services. They also develop reports based on local data and make recommendations for system improvement. The PCES Task Force: Patient, Family, Communication and Outreach Workgroup (2018) analyzed data from the hospital system Emergency Departments in Franklin County and identified the top five zip codes with the highest utilization of emergency psychiatric services. This included the far East (43232/43068), Linden/Northeast (43224/43211), Southside (43207), Franklinton (43223), and Hilltop (43204) communities. It is important to note that the African American population is disproportionately represented in these areas and is described below.

The United States Census Bureau 2013-2017 five-year estimates based on the 2010 Census reports the following population descriptions for the highest utilization of emergency psychiatric services.

Franklin County Zip Code	Population	Living below poverty	% Caucasian	% Black or African American	% Hispanic or Latino
43232	42,201	22%	35%	58%	4%
43068	38,699	10%	63%	26%	6%
43224	38,699	28%	47%	40%	6%
43211	23,2999	41%	24%	61%	5%

The National average of Black or African American individuals in the general population is 13%. Within the target areas of these four zip codes, Black or African Americans are represented in rates

approaching four to five times the national average. According to the U.S. Department of Health and Human Services of Office of Minority Mental Health (2016):

- Adult Black/African Americans are 20 percent more likely to report serious psychological distress than adult whites.
- Adult Black/African Americans living below poverty are three times more likely to report serious psychological distress than those living above poverty.
- Black/African Americans of all ages are more likely to be victims of serious violent crimes than non-Hispanic whites, putting them at higher risk for Post-Traumatic Stress Disorder (PTSD).
- Black/African Americans are twice as likely as non-Hispanic whites to be diagnosed with schizophrenia (American Psychological Association, 2016).

Although the project team will not exclusively target the African American population with SMI, CND is located on the near Eastside of Columbus and serves a disproportionately high African American population. This is a population focus in the mission of the organization to provide culturally competent access in an effort to address the health disparities mentioned above. CND leadership is made up of 67-percent African American individuals, while the entire staff is 78-percent African American.

Evidence-Based Practice Model

Assertive Community Treatment (ACT) is an evidence-based approach to care that emerged in the 1980s in response to the shift toward deinstitutionalization in the mid-twentieth century. Leonard Stein and Mary Ann Test (1980) developed this conceptual model for community-based treatment programs as an alternative to hospitalization. The main objectives of ACT are to stabilize patients living with SMI in the community and to support them living independently or semi-independently with the underlying philosophy that treatment needs to be brought to the community to treat this patient population (Schinnar, Rothbard, Kanter, & Jung, 1990). ACT provides a more flexible and intensive support than traditional outpatient mental health services. ACT involves a transdisciplinary team of professionals including a psychiatrist or psychiatric nurse practitioner, social workers, nurses, case managers, peer

recovery supports, and vocational specialists to meet the profound needs of patients with SMI (Mueser, 1998). ACT requires low staff-to-patient ratios with greater fidelity being one staff to ten patients. ACT team members share caseloads. Services provided by the ACT team include treatment of psychiatric disorders and comorbid physical conditions; support with practical living needs such as paying bills, shopping, and meal preparation; facilitation of community resources and social inclusion; and providing recovery services in order to improve functioning (Mueser, 1998).

Purpose of the Project

The purpose of this DNP project was to evaluate the implementation of a new ACT program as the standard of care in serving a new panel of patients with SMI receiving services at Community for New Direction. Although there is extensive research and evidence supporting ACT related to clinical and cost effectiveness, ACT is identified as an underutilized treatment modality for patients with SMI (Kreyenbuhl, Buchanan, Dickerson, Dixon, & Schizophrenia Patient Outcomes Research Team, 2010).

Objectives

The first objective of this project was to develop policies and procedures to implement the ACT program. The second objective was to construct the ACT team composition and train the staff to acquire the knowledge, skills and attitudes required for ACT principles to translate into their practice specialties. The third objective was to evaluate the newly implemented program by measuring the adequacy of ACT team implementation with a fidelity measurement tool.

Significance of This Project to Nursing and Health Care

The need for expanded services was identified in the community after the closure of the long-standing CMHC agency, increased demand from emergency departments and psychiatric inpatient facilities, as well as existing CMHCs reaching capacity to serve patients with SMI. The implementation of an ACT program was intended to expand service delivery in the community, increase access to care, and improve outcomes in patients with SMI. When expanded services are created for patients with SMI, more individuals receive quality evidenced-based care to improve outcomes in decreasing suffering and

cost to patients, the community, and the healthcare system as a whole (Marquant, Sabbe, Nuffel, & Goethals, 2016).

Section Two: Review of Literature

Clinical Practice Problem Statement

For individuals with SMI (P), what is the effect of ACT (I) compared to treatment as usual (C) on patient outcomes (O)?

Evaluation of the Literature

An exhaustive search of the literature was completed using multiple search terms. The search strategy included the following databases: Cochrane, CINAHL, PubMed, and Medline. Key search terms included:

- Assertive Community Treatment (ACT)
- Severe and Persistent Mental Illness Treatment
- Severe Mental Illness (SMI)
- ACT AND Hospitalization or Readmission
- ACT and patient outcomes

The search was limited to include articles written within the past five years (2014-2019). However, several hallmark articles were included from earlier years. The total results were 600 articles with 55 being relevant to the topic and ultimately 20 found to be meaningful for this project. Inclusion of articles was based on ACT program outcomes examining this community model of care. The levels of evidence included four level I systematic reviews or meta-analyses; two level II randomized controlled trials; eight level IV cohort studies; three level V systematic reviews of qualitative or descriptive studies; two level VI qualitative or descriptive studies; and one level VII expert consensus. Reference literature and outcomes synthesis tables in Appendix.

Overall Findings of ACT Programs

The use of ACT is well documented with strong evidence based on a body of literature that indicated ACT is effective. The ongoing challenge in effective treatment of mental illness is the gap that exists between the production of evidence and the uptake in healthcare settings (Bighelli, Ostuzzi, Girlanda, Cirpriani, Becker… & Barbui, 2016). Patients receiving ACT are found to have:

- Decreased voluntary and involuntary hospitalizations (Harrison, Curtis, Cousins, & Spybrook, 2017; Kikkert Goudriaan, Waal, Peen, & Dekker, 2018; Nugter, Engelsbel, Bahler, Keet, & Veldhuizen, 2016; Penzenstadler, Soares, Anci, Molodynski, & Khazaal, 2019; Schottle, Schimmelmann, Ruppelt, Bussopulos, Frieling, Nika…Lambert, 2018)
- Reduced psychiatric emergency room visits (Aagaard Tuszewski, & Kolbaek, 2017)
- Shorter stays in the hospital (Aagaard et al., 2017; Clausen, Landheim, Oden, Benth, Heiervang…Ruud, 2016; Clausen, Ruud, Odden, Benth, Heiervang…Landheim, 2016; Dieterich, Irving, Bergman, Khokhar, Park, & Marshall, 2017; Harrison et al., 2017; Hengartner, Klauser, Heim, Passalacquan, Andreae, Rossler, & Wyl, 2017; Nugter et al., 2016; Penzenstadler et al., 2019; Sood & Owen, 2014)
- Decreased incarceration rates (Marquant et al., 2016)
- Improved general functioning (Addington, Anderson, Kelly, Lesage, & Summerville, 2017; Clausen et al., 2015; Dieterich et al., 2017; Hengartner et al., 2017; Linz & Sturm, 2016; Nugter et al., 2016; Penzenstadler et al., 2019)
- Improved employment (Dieterich et al., 2017)
- Decreased homelessness (Dieterich et al., 2017)
- More stable housing (Monroe-DeVita, Morse, & Bond, 2012; Penzenstadler et al., 2019)
- Reduction in substance use (Fluery Djouini, Huynh, Tremblay, Ferland…Belleville, 2016; Fries & Rosen, 2011; Harrison et al., 2017; Kikkert et al., 2018; Monroe-DeVita et al., 2012)

- Improved medication adherence (Valenstein, McCarthy, Ganozy, Bowersox, Dixon, Miller, & Visnic, 2013)
- Greater improvement in symptoms (Hengartner et al., 2017; Monroe-DeVita et al., 2012; Penzenstadler et al., 2019)
- Higher satisfaction with treatment
- Improved social interaction (Linz et al., 2016)
- More frequent contact with services and
- Higher quality of life (Addington et al., 2017; Clausen et al., 2015; Dieterich et al., 2017; Hengartner et al., 2017; Linz et al., 2016; Nugter et al., 2016; Penzenstadler et al., 2019)

Predictors of ACT Success and Relapse

Penkunas and Hahn-Smith (2016) conducted a cohort study investigating the demographics and clinical predicators of hospitalization of 328 participants in ACT services. The authors found patients were most likely to be admitted for inpatient treatment during the first 200 days of the ACT program. Patients ages 18 to 39-years-old were more likely to be admitted to the hospital in comparison with the 40 to 69-years-old demographic. The authors hypothesized the younger group may be experiencing symptoms related to the onset of psychiatric disorders. Participants diagnosed with psychotic disorders were more likely to be hospitalized. Patients with schizophrenia and other psychotic disorders were readmitted sooner than patients with other diagnoses. The authors found a history of hospitalization is a predominant clinical characteristic predictive of future hospitalizations. There were no differences in hospitalization usage due to ethnicity, substance abuse history, living situation, or gender.

ACT Effects Related to Severity of SMI

Nugter, Engelsbel, Bahler, Keet, and Veldhuizen (2016) investigated the social and clinical outcomes with the use of flexible ACT which provides services to less severe patients with SMI than are typically served with ACT. The authors examined three teams consisting of 372 patients and found with the implementation of flexible ACT, results showed a decrease in psychiatric hospital admissions,

decrease in the number of hospital days, increase in psychosocial functioning, greater quality of life, and greater treatment adherence. Schottle et al. (2018) examined the effectiveness of integrated care with ACT in 115 patients with severe Schizophrenia-spectrum and Bipolar I disorders. Over a four-year follow up the study found low service disengagement rates and low hospital days. Improvements were seen in psychopathology, illness severity, functioning level, quality of life, and patient satisfaction in both disorders (Schottle et al, 2018). These studies give evidence that the ACT model may be beneficial to less severe patient populations (Nugter et al., 2016; Schottle et al, 2018).

ACT Effects on Forensic Outcomes

ACT programs have an impact on incarceration rates of patients with SMI. Marquant et al. (2016) conducted a systematic literature review on the effectiveness of ACT for forensic outcomes measures. The search identified current literature dated from 1990 through 2014, including eleven studies, three of which were randomized controlled trials whereas eight were explorative designs of retrospective and longitudinal. All included studies reported low forensic outcomes including rearrests, decreased recidivism, decreased hospitalized days, and incarcerations. The forensic ACT model targets patients with primary psychotic illnesses. It is important to note that this model does not appear to benefit those with severe substance abuse.

ACT Treatment for Dual Diagnoses with SMI

The integration of dual diagnosis for SMI and alcohol and/or substance use disorders is essential to promote positive outcomes with ACT patients. Fleury, Djouini, Huynh, Tremblay, Ferland, Menard, and Belleville (2016) conducted a systematic review and meta-analysis of lifetime remission rates from substance use disorders for patient with SMI using Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. A comprehensive search of studies published between 2000 and 2015 with a follow-up of at least three years resulted in 21 studies meeting the eligibility criteria. Results support that substance use disorders are chronic, long-term disorders that require treatment such as ACT and intensive case management. The review demonstrated a wide variation in remission rates between 35.0% and 54.4% after a weighted mean of 17.9 years of follow up. The review concluded that ACT

reduces substance use and increases rates of remission for substance use disorders. Penzenstadler et al. (2019) also conducted a systematic review of ACT interventions for patients with substance use disorders using the PRISMA guidelines. The review included eleven studies with sample size ranging from 87 to 203 participants. Penzenstadler et al. emphasized the importance of high fidelity to the ACT model for reliable outcomes. Substance use was reduced in half of the data sets with one data set showing a significant reduction. These findings indicate the need for stage-wise interventions to meet patients where they are in their readiness to discontinue the use of substances. Other findings attributed to the ACT intervention included increased service use profile, decreased hospitalization rates, decreased symptomology, increase in stable housing, and increase in quality of life. Clausen et al. (2016) used a naturalistic observational study to compare inpatient services amongst ACT patients with and without substance use problems. The study involved 84 participants with problematic substance use. There was no change in new admissions, however, there was a decrease in total inpatient days. Both participants with and without substance abuse problems had a significant reduction in inpatient services use while participating in ACT treatment.

ACT Effects on Social Engagement and Quality of Life

Social engagement influences continuity of care and treatment adherence of individuals with SMI. Hengartner et al. (2017) were interested in the pivotal time after psychiatric hospitalization for patients with SMI. During this time, there is an increased risk of suicide, self-harm, and rehospitalization for this population. Hengartner highlights the most pressing issue after discharge being compliance with outpatient service appointments, non-adherence to medication, or disengagement from outpatient care. The authors published a randomized controlled trial examining the effects of psychosocial post discharge interventions. The study involved 152 patients with primary diagnosis of substance use disorder, psychotic disorder, or major mood disorder. The main objective of the intervention program was to support patients in building and maintaining a social network. The study found that social interventions have a potential to enhance continuity of care and adherence to outpatient services.

ACT has the ability to impact the quality of patients' lives. Clausen, Landheim, Odden, Polit, Heiervang, et Al. (2015) examined the association of quality of life and functioning in an ACT population of 149 participants engaging in 12 ACT teams. At first enrollment, participant satisfaction of quality of life was mixed, satisfaction with employment and financial circumstances were low. The analysis found no association of psychotic symptoms with quality of life. Both anxiety and depressive symptoms were found to worsen quality of life. Practical and social functioning was positively associated with increased satisfaction and quality of life. Evaluation and monitoring of anxiety and depression are important components of the program.

Linz and Sturm (2016) conducted qualitative research using interpretive description to explore the efforts of ACT teams to facilitate social integration for patients with SMI. The research found social interaction to be an important variable in the context of community life for participants. The authors emphasized the importance of genuine, caring, and professional relationships in the delivery of ACT services. They suggest weekly groups and monthly community activities offerings to facilitate social functioning among patients. The authors also recommend a treatment team member be responsible for social activities. An unexpected finding was employed patients often discontinued medications in order to increase alertness which exacerbated psychiatric symptoms resulting in rehospitalizations. The authors suggest nursing and prescribers work with newly employed patients to monitor and adjust medications as necessary for employment demands and psychiatric stability.

ACT Practice Guidelines

Addington, Anderson, Kelly, Lesage, and Summerville (2017) outlined practice guidelines for comprehensive community treatment for patients with schizophrenia-spectrum disorders. The authors highlight that successful treatment requires evidence-based coordinated specialty care with accessibility for first-episode psychosis services to ACT programs. The guidelines cited in congruence with ACT services include:

- Full range of interventions including psychological, pharmacological, social, occupational and culturally safe interventions.

- Community mental health teams serving a defined population including staff ratio of 1:10 patients as standards of ACT.
- Service-user experience working in partnerships with patients and family members to build supportive relationships.
- Priority for people with SMI who have a high use of inpatient services, show residual psychotic symptoms, and have a history of poor engagement with services resulting in frequent relapse.
- Intense case management
- Crisis resolution and home-treatment teams
- Supported employment
- Peer-support and self-management
- Relapse and re-referral to secondary care

It is essential for patients with schizophrenia-spectrum disorders to have organized care that provides access to a comprehensive system of care grounded in specific evidence-based services and recommendations (Addington et al., 2017).

ACT Program Effects Sustainability

Monroe-DeVita, Morse, and Bond (2012) conducted a review of literature about the implementation and sustainability of ACT between 2000 and 2011. Positive outcomes include decreased psychiatric hospitalization, increased housing stability, greater treatment adherence, increased patient satisfaction, and increased family satisfaction. The authors recognize ACT as a strong evidence-based practice incorporating recovery-oriented practices to serve patients with the highest hospitalization rates. The review emphasizes the importance of high fidelity to the ACT model to produce expected outcomes. The authors made recommendations for program standards and administration oversight for effective implementation of the ACT model. These included leadership as the most important factor effecting fidelity and the need for a champion of the model to ensure accountability.

The benefits of ACT are highly dependent on program fidelity. Program evaluation involves outcomes monitoring, service-data monitoring, and fidelity assessment (Monroe-DeVita et al., 2012). The most widely used fidelity scale for ACT has been the Dartmouth Assertive Community Treatment Scale (DACTS). DACTS has been shown to have gaps and limitations (Monroe-DeVita, Teague, & Moser, 2011). Thus, an enhanced version of DACTS has been created called the Tool for Measurement of Assertive Community Treatment (TMACT). TMACT measures operations and structures (OS), core team (CT), specialist team (ST), core practices (CP), evidence-based practices (EP), and person-centered planning and practice (PP) subscales rated on a 1 to 5 scale, with ratings of 5 representing high fidelity to the ACT model (Monroe-DeVita, Moser, & Teague, 2013).

Theoretical Basis

Conceptual Framework. The Iowa Model Revised will be use as the conceptual framework for designing the implementation strategy for the project (Iowa Model Collaborative, 2017). The Iowa Model is a roadmap to initiate and implement practice change supported by evidence to improve the quality of care. The model begins with the identification of the patient issue and opportunity for change. The problem or patient issue of this DNP project was identified as the complexities related to patients with SMI and the opportunity to implement an evidence-based program to serve this population. The IA Model includes a number of decision points to design a project. Decision point one examines whether this topic is a priority? The implementation of the program to expand services for SMI is aligned with the CND organization's mission stating, "through innovative programs and positive relationships, CND empowers individuals to achieve their potential." Financial resources and funding have been secured through the ADAMH Board of Franklin County.

The next step in the IA Model is to form a team to assemble, appraise, and synthesize the evidence with an emphasis on four criteria weighing the evidence, which includes quality, quantity, consistency, and risk. The second IA Model decision point inquires: Is there sufficient evidence? The evidence of ACT for individuals with SMI is strong in quantity, quality, and consistency. Design and pilot the practice change is the next section of the model with an emphasis on engagement of patients and

verification of preferences; consideration of resources, constraints, and supports; development of localized protocol; creation of an evaluation plan; collection of baseline data; development and implementation of the plan; preparation of clinicians and materials; promote adoption of the practice; and collect and report post-pilot data. If the change is deemed appropriate for adoption in practice (the third model decision point), efforts to integrate and sustain the practice are pursued and results are then disseminated (Iowa Model Collaborative, 2017).

Project Alignment with Organizational and Departmental Goals

Community for New Direction (CND) celebrated 30 years of service this year. In 1989, the organization responded to a critical need in the community regarding African American children living in impoverished communities with high rate of drug use and crime. CND began with providing after school programming, which soon expanded to drug use prevention and education, summer camps, mentoring, college tours, outreach, and gang intervention. With the emergence of the opioid epidemic and the growing need in the community, CND opened up treatment services to adults struggling with substance use disorders in 2017. In January 2019, CND expanded services to serve individuals with mental illness and then committed to taking on ACT services to fill the community void after the close of a large CMHC. CND is accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF), certifying the agency upholds quality care standards to mental health patients with a focus on person-centered care.

Recommendations Summary

The evidence in the literature supports ACT services for patients with SMI. This model is well-founded in evidence and has shown promising outcomes for the lives of individuals suffering with SMI. These outcomes include but are not limited to a reduction in voluntary and involuntary hospitalizations, reduced psychiatry emergency room visits, shorter stays in the hospital, lower likelihoods of incarceration, improved general functioning, improved employment rates, decreased homelessness, more stable housing, substance use reduction, improved medication adherence, greater improvement in

symptoms, higher satisfaction with treatment, improved social interaction, more contact with services, and higher quality of life.

Section Three: Methods

Plan for Implementation of Practice Change

The purpose of this DNP project was to evaluate the implementation of a new ACT program as the standard of care in serving a new panel of patients with SMI receiving services at CND. A potential barrier to implementation was the complexity of the model with multiple components requiring detailed conditions to meet high fidelity. However, using the TMACT fidelity tool in the early stages of program implementation was intended to aid with identifying the potential weaknesses of the program and allow for quality improvement interventions to take place prior to the next fidelity review. It should be noted that the TMACT is a more robust fidelity tool than the Dartmouth Assertive Community Treatment (DACT) scale and was the chosen tool for this project because it sets a higher bar for ACT program performance and has greater sensitivity to change than the previous tool (Monroe-DeVita, Teague, & Moser, 2011). Furthermore, the instrument was created to minimize rater subjectivity, increasing reliability and validity of the scale. The TMACT provides greater specificity for the administrative and clinical fields with the ability to distinguish among ACT programs at different levels of functioning and quality (Monroe-Devita, et al., 2011). Obtaining more precise information on the program performance gives greater support for targeting training, consultation, supervision, and quality improvement initiative for the organization as well as at the statewide level.

Project Design. This project was a new program implementation and fidelity evaluation of the ACT practice model in the treatment of patients with SMI. The multidisciplinary team members included a team lead (Licensed Independent Social Worker), case managers with specialized roles in employment and recovery supports, nurse, admissions coordinator and psychiatric mental health nurse practitioner (PMHNP). The program has the capacity to serve 150 individuals with SMI with 60 of them being served at an ACT level of care. Twin Valley Behavioral Health and The Ohio State University are the two initial referral sources of patients with SMI to CND. Referrals are received through the admissions coordinator

who communicates with the referring entity and schedules the inpatient assessment with the ACT team. Team members visited the patient while in the hospital to engage and assess to create a treatment plan for the transition to outpatient level of care.

As outlined in the Ohio Administrative Code 5160-27-04, the Ohio Medicaid ACT eligibility criteria include:

Criteria	Description	Supportive Documentation
1. Eligible Diagnosis	Schizophrenia Spectrum Disorder Bipolar Spectrum Disorder Major Depressive Disorder with Psychotic Features	• Hospital Discharge Summary • Diagnostic Assessment • Social Security Disability Determination Letter • Provider-developed ACT Referral Form
2. Recipient of SSI/SSDI OR ANSA	Supplemental Security Income and/or Social Security Disability OR Adults Needs and Strengths Assessment of two or greater on at least one items in "mental health needs" or "risk behavior" or a score of three on at least one of the items in "life domain function section"	• SSI/SSDI Determination Letter • ANSA Assessment
3. Institutional Utilization or other function criteria of one or more items:	a. Two or more admissions to a psychiatric inpatient hospital setting during the past twelve months b. Two or more occasions of utilizing psychiatric emergency services during the past twelve months, or c. Significant difficulty meeting basic survival needs within the last twenty-four months, or d. History within the past two years of criminal justice involvement including but not limited to arrest, incarceration, or probation, and	• Utilization Review from patient report and/or collateral from psychiatric providers, inpatient setting and criminal justice entities
4. The recipient experiences one or more of the following:	a. Persistent or recurrent severe psychiatric symptoms, or b. Coexisting substance use disorder of more than six months in duration, or c. Residing in an inpatient or supervised residence, but clinically assessed to be able to live in a more independent living situation if intensive services are provided, or	• Psychiatric history and/or diagnostic evaluation

	d. At risk of psychiatric hospitalization, institutional or supervised residential placement if more intensive services are not available, or e. Has been unsuccessful in using traditional office-based outpatient services; and	
5. Age	The recipient is eighteen years of age or older at the time of ACT enrollment	• Identification

Feasibility and Cost. The feasibility and cost of the ACT program were supported by the Franklin County ADAMH Board, OhioMHAS, and Medicaid. At the September 2019 board meeting, ADAMH Board of Franklin County allocated $198,963 for the remainder of 2019 and $441,627 for 2020 to CND to implement these services at the Atcheson St. location on the East side of Columbus. Adequate time and resources were dedicated to the project including work space, electronics and office supplies (computers, laptops, printers, mobile phones, office furniture), IT support and EHR support to develop specialized templates and service codes for the program, consultation support from CARF consultants and Case Western Reserve University consultant from their Center for Evidence-Based Practice, CND leadership and Human Resources support for hiring and training.

Setting. Community for New Direction, a CMHC located in Columbus Ohio was the setting for the program implementation and evaluation. This site provides mental health and substance use disorder treatment primarily to patients with Medicaid, Medicare, and uninsured.

Sample. The sample consisted of adults 18 years or older diagnosed with SMI, including schizophrenia-spectrum disorders, bipolar disorder, major depressive disorder with psychotic features or another mental illness resulting in profound debilitation.

Timeline. The Franklin County ADAMH board of executive voted and passed the resolution to fund the expansion of CND services to SMI/ACT in September 2019. The CND Director of Outpatient Treatment Services developed policies and procedures for the ACT program with support from the Chief Operating Officer, Case Western Reserve University ACT consultant, and CARF consultants. CND hired staff members for the team and met with partners from the state hospital and local hospital systems to

introduce CND as a lead provider in the ADAMH system and start to coordinate referrals from inpatient to CND outpatient mental health services. At the end of October, CND started to take referrals for SMI patients. Training for ACT began in September 2019 and has been ongoing throughout implementation. The Director trained staff through didactic, team building, and kinesthetic instruction. This DNP final project reports includes discussion of the project implementation and TMACT results after the first three months.

Methods. Upon three months of implementation of ACT, the first TMACT was completed with the acknowledgment that the tool will continue to be used over the next 12 months and thereafter for ongoing monitoring quality improvement for the program. The TMACT was used to evaluate the ACT program fidelity. This tool is intended to provide a "snapshot" of the ACT team structure, staffing, and practices to compare with the defined ACT model to determine program fidelity. The TMACT is divided into six subscales with a total of 47 program-specific items. Each item is rated on a 5-point scale ranging from one, not implemented to five, fully implemented. The point scale was determined by a combination of expert opinion and empirical literature (Monroe-DeVita, Moser, & Teague, 2013). The TMACT was used as a tool to identify core areas of strengths and weaknesses to target ongoing performance improvement efforts as development of the team and program continue to progress.

TMACT Subscales

Subscale	Description	Example Items
1. Operations & Structure	12 items assess the organization and structure of the ACT team.	• Team Approach • Daily Team Meeting
2. Core Team (CT)	7 items assess the dedicated full-time equivalency (FTE) and roles of the team leader and medical staff.	• Team Leader on Team • Role of Nurses
3. Specialist Team (ST)	8 items assess the FTE and roles of the team specialists.	• Vocational Specialist • Role of Peer Specialist
4. Core Practices (CP)	8 items assess more general ACT services, which include the direct provision of those services (vs. brokering), as well as the nature, frequency, and intensity of services.	• Intensity of Service • Full Responsibility for Psychiatric Rehabilitation Services

5. Evidence-Based Practices (EP)	8 items assess specialized services which include the direct provision (vs. brokering) of those services, as well as the degree to which the full team embraces the philosophy and practice of core evidence-based practices for consumers typically served within ACT.	• Full Responsibility for Wellness Management and Recovery Services • Integrated Dual Diagnosis Treatment
6. Person-Centered Planning and Practices (PP)	4 items assess core practices that facilitate recovery by enhancing consumer self-determination and utilizing person-centered treatment planning and service delivery.	• Person-Centered Planning • Strengths Inform Treatment Plan

(Monroe-Devita, Moser, Teague, 2013)

Procedure. Patients were identified using Ohio Administrative Code ACT eligibility criteria. The ACT team lead (LISW) and a case manager visit the patient during their inpatient hospitalization to perform an intake assessment. Engagement by the ACT team during the inpatient hospitalization was facilitated as much as possible depending on the amount of time the person was inpatient. A CND discharge plan was created with the client and provided to the client prior to discharge from inpatient. One of the ACT team members picked up the patient at hospital discharge to provide support and build rapport with the patient. The patient was seen by the PMHNP at the outpatient facility or in the community within the next week. Depending on the preferences of each individual, a combination of services were provided. The patient was encouraged to engage in individual counseling with the LISW, vocation and recovery supports through specialized team members, nursing visits, and medication management or monitoring with the PMHNP. Depending on the patient's functioning and comfort level, service delivery in the community was always intended to be an option for all ACT patients. ACT services continue to be delivered throughout the initial 30-days, on average 3-5 services per week.

Data Analysis. The DNP student, as the CND Director of Outpatient Treatment was the quality improvement officer and the designated executive for the TMACT to evaluate fidelity of ACT program implementation. The TMACT fidelity evaluation was completed using the TMACT protocol Part 1 and Part 2, which involves chart review, clinician interview, and observation of daily team meeting.

Section Four: Findings

Results/Outcomes

The TMACT fidelity measure tool was completed on February tenth and eleventh of 2020 with the following results:

Subscale	Item Description	Score
Operations and Structure (OS) OS1	Low Ratio of Consumer to Staff	5.0
OS2	Team Approach	4.0
OS3	Daily Team Meeting (Freq&Att)	5.0
OS4	Daily Team Meeting (Quality)	3.0
OS5	Program Size	5.0
OS6	Priority Service Population	5.0
OS7	Active Recruitment	5.0
OS8	Gradual Admission Rate	3.0
OS9	Transition to Less Intensity	5.0
OS10	Retention Rate	4.0
OS11	Involvement in Psych Hosp Decision	5.0
OS12	Dedicated Office-Based Prog.	4.0
Total OS1-12		**53.0**
OS Fidelity Result		**4.41**
Core Team (CT) CT1	Team Leader on Team	5.0
CT2	Team Leader Practicing	5.0
CT3	Psychiatric Care Provider	3.0
CT4	Role of Psych Provider	4.0
CT5	Role of Provider on Team	5.0
CT6	Nurse on Team	1.0
CT7	Role of Nurses	2.0
Total CT1-7		25.0
CT Fidelity Result		**3.57**
Specialist Team (ST) ST1	Substance Abuse (SA) Specialist on Team	4.0
ST2	Role of SA Specialist in Treatment	3.0
ST3	Role of SA within Team	4.0
ST4	Vocational Specialist (VA) on Team	4.0
ST5	Role of VA in Services	5.0
ST6	Role of VA within Team	4.0
ST7	Peer Specialist on Team	1.0
ST8	Role of Peer Specialist	1.0
Total ST1-8		**26.0**
ST Fidelity Result		**3.25**
Core Practices (CP)	Community-Based Services	3.0

CP1		
CP2	Assertive Engagement Mechanisms	5.0
CP3	Intensity of Service	3.0
CP4	Frequency of Contact	2.0
CP5	Frequency of Contact with Natural Supports	1.0
CP6	Responsibility for Crisis Services	2.0
CP7	Full Responsibility for Psych Services	5.0
CP8	Full Responsibility for Psych Rehabilitation Services	5.0
Total CP1-8		**26.0**
CP Fidelity Result		**3.25**
Evidence-Based Practices (EP) EP1	Full Responsibility for Dual Disorders Treatment	5.0
EP2	Full Responsibility for Vocational Services	4.0
EP3	Full Responsibility for Wellness Management and Recovery Svs.	3.0
EP4	Integrated Dual Disorders Treatment	5.0
EP5	Supported Employment Model	2.0
EP6	Engagement & Psychoeducation with Natural Supports	1.0
EP7	Empirically-Supported Psychotherapy	5.0
EP8	Supportive Housing Model	5.0
Total EP1-8		**30.0**
EP Fidelity Result		**3.75**
Person-Centered Planning and Practices (PP) PP1	Strengths Inform Treatment Plan	5.0
PP2	Person-Centered Planning	1.0
PP3	Interventions Target a Broad Range of Life Domains	4.0
PP4	Consumer Self-Determination & Independence	4.0
Total PP1-4		**14.0**
PP Fidelity Result		**3.5**
Total Subscales Fidelity		**21.73**
Total Overall Fidelity Result		**3.62**

The results of the TMACT fidelity tool revealed both strengths and weaknesses of the CND ACT program. The primary strength of the tool is to highlight the specific details of the model that contribute

to high fidelity. This is a new team, therefore the low totals of patients enrolled allows for the higher scores on operations and structure subscales. The scores included the items involving low ratio of consumer to staff (OS1), program size (OS5), priority service population (OS6), active recruitment (OS7), transition to less intensive services (OS9), retention rate (OS10), and involvement in psychiatric hospitalization decisions (OS11).

Due to the newness of the team, there are vacancies in the team position for the full-time designated ACT team members including the full-time ACT nurse (CT6-7), full-time peer recovery support (ST7-8) and 0.8 full-time for psychiatric care provider (CT3-4) positions, which are not yet filled. Although the role of the psychiatric prescriber is well developed, the dedication of a full-time employee does not rate high as the team shares the PMHNP time with other patients served by the organization. The admission to the team (OS8) is at a faster pace than ACT recommended due to balancing of financial responsibilities for the organization. Other lower scores included the percentage of community-based services (CP1), intensity of services (CP3), and frequency of contact (CP4). Frequency of contact with natural supports (CP5) and responsibility of crisis services (CP6) were both rated low with a score of two. This will be a priority of focus for the team to improve as the program continues to evolve.

Strengths of the operations and structure subscales are the consistency and communication involved in the daily team meetings of the team. The team meeting was a practice put in place prior to the start of ACT with the general programs, which led to the structure and process of the team meeting being well established at fidelity review. In consideration of the core team, the team leader and role of the team lead rates as high fidelity. The LISW was specifically hired for the ACT team and was able to devote her full attention to the team and the development of the program. The high-fidelity scores in evidence-based practices related to dual disorders (EP1) and integrated dual disorders treatment (EP4) revealed an existing strength with the CND program. The high scores can be attributed to the fully-developed substance use disorders program operating at the facility and the ease to coordinate co-occurring treatments for patients served by ACT. In addition, the full responsibility for wellness management and recovery services (EP3) were also well established within the CND practices and a standard of care for

the adult outpatient treatment services. Lastly, the program rated high on three of the four person-centered planning and practices Subscale (PP1, PP3, PP4) which is a direct reflection CND's dedication to the standards of care represented by the CARF accreditation with the emphasis on person-centered care ingrained in the organizational culture. The PP2 rated low due to the subscale defined by the function of treatment planning every six months regularly and involving the full team with the client. The time-interval was not met with the program being evaluated at three months. The structure of full team involvement has not yet been developed and will be a priority for further program development.

Discussion/Conclusions

High fidelity ACT teams make the most difference in the lives of patients with severe mental illness. The ultimate goal of CND is to reach high fidelity with their ACT program. Through building the team, adopting the policies and practices of a new treatment model, implementing the procedures and practices of the model and getting a snapshot at the start of the program, the ACT program is on its way to reaching this goal. The results of the fidelity tool highlights the strengths of the team as well as the areas in need of further examination and improvement. Based on the TMACT results, focus and priority aspects of the program are:

- Quality of the daily team meeting to include daily staff schedule for the day's contacts, weekly consumer schedules, and supervisor checks holding staff accountable for follow-through.
- Hold the gradual admission rate for the team to take consumers at a low rate to maintain a stable service environment.
- Dedicated office-based program assistance to focus on direct support to staff including monitoring and coordinating daily team schedules; serving as a liaison between consumers and staff, such as attending to walk-ins and calls from consumers or natural supports.
- Hire an ACT nurse (RN required) to dedicate fully to the team and perform all requirements under role of nurse (CT7).

- Enhance the role of the substance abuse specialist on the team and fulfill the role of the substance abuse specialist in treatment (ST2) and the role of the substance abuse specialist within the team (ST3).
- Hire the peer specialist position for the team (ST7) and ensure all requirements of the role are fulfilled (ST8).
- Strengthen the integration of natural supports or help consumers develop natural supports (CP5) and provide engagement and psychoeducation with natural supports (EP6).
- Add the 24-hour crisis services to ensure the team has 24-hour responsibility to respond to psychiatric crises (CP6).
- Develop the person-centered treatment planning session for consumers to meet with key team members on a regular basis.

This is only the beginning of this program development and this must be considered. One of the valuable conclusions for the project is the creation of a roadmap to continue to develop the program and reinforce quality improvement measures proven to affect the fidelity of the program and optimal program and patient outcomes.

Limitations

Multiple limitations can be identified with the project. The short period of program implementation of three months is a limitation of the project. This resulted time constraints for the development and training for the staff, which can lend to challenges with the confidence and comfort level of the team with the program procedures and individual roles. Although there is no certification to use the TMACT, it is recommended that evaluators receive formal one day training and observe a full fidelity assessment with experienced evaluators. Trainings were not accessible in a reasonable time or geographic distance to allow for participation in the training. Fortunately, there are detailed and step-by-step protocols to reference to administer the tool. Furthermore, the tool recommends two evaluators outside of the agency to perform the assessment. Since the state of Ohio still uses the DACT to measure

fidelity for ACT, the use of the TMACT has limitation with comparison to other ACT fidelity ratings in the state. However, as it was noted previously, the TMACT was chosen as it is found to be an improved and superior tool to the DACT.

Section Five: Recommendations and Implications for Practice

Project Summary

This project exemplifies how clearly identified needs in the community can be addressed. It explores an evidence-based intervention widely embraced by the psychiatric community delivered through an agency with intentionally diverse professionals to serve patients with severe mental illness, and specifically examines the initial fidelity of the program implementation. ACT is a comprehensive and complex evidence-based approach to the treatment of patients with severe mental illness. By following the operations and structures of the program, a compelling team with specialized yet transdisciplinary roles can provide the quality, person-centered care.

Implications for Practice

The American Association of Colleges of Nursing (AACN) DNP essential I, II, III, VI, VII, and VIII will provide the grounding for this scholarly project (DeNisco & Barker, 2016).

Essential I: The Scientific Underpinning for Practice. The use of science-based theories and concepts were used to determine the nature and significance of health and healthcare delivery to patients with SMI. The advanced strategies of the Assertive Community Treatment model were evaluated with the TMACT fidelity measurement tool.

Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking. The introduction of another ACT program impacted CND as an organization and the wider mental health system in Franklin county in expanding capacity of evidence-based services for patients with SMI. The additional services impact the quality of care and cost to the healthcare system, which included but is not limited to emergency department visits and psychiatric hospitalization.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice. A literature review using thorough search strategies and critical appraisal of the evidence were used to

determine and implement the best evidence into standardized practice. Theoretical frameworks, project design, and evaluation methodology were used to improve practice and the practice environment.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes. The ACT model is grounded in an interdisciplinary approach to provide collaborated care to patients with SMI. Team members included case managers, social workers, substance abuse specialist, PMHNP, nurses, peer recovery support, and vocational specialist.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health. One of the primary goals of the ACT program is to reduce risk and prevent illness in individuals with SMI and their families. Concentration was on improving the health status of this population and the evaluation of the care delivery model.

Essential VIII: Advanced Nursing Practice. The project involved evaluation of therapeutic intervention within psychiatric nursing to promote quality improvement and implementation of evidence-based practice.

The use of ACT expanded capacity in Franklin County to serve patients suffering from severe mental illness who desperately need the support. The project provided a platform for a new evidence-based program to be implemented in a structured and systematic progression to ensure quality and fidelity. The project also highlighted the role that nurses can play in leadership for community mental health. Historically, community mental health has been led by counseling professionals and psychiatrists. The expanded ability of the DNP-prepared advanced practice nurse to lead evidence-based quality improvement supports them as clinicians to lead interdisciplinary teams that are critical for implementing evidence-based practice. DNP- prepared PMHNPs are uniquely qualified for leadership within community mental health programs because of their comprehensive understanding of this patient population which includes an integrated lens necessary to treat the whole person.

The tragedy associated with the thirty years premature death of persons with mental health compared to the general population is a harsh reality to accept and one that needs changing. Nurse Practitioners are one remedy to assist with this disparity. At CND, the ACT PMHNP will provide general

primary care needs to patients while addressing the psychiatric conditions. The use of nurse practitioners allows for better integration and coordination of care for the whole person with the hope that it will extend the quality and life of individuals with severe mental illness. CND will continue to improve fidelity with regular evaluation using fidelity assessment and will expand the program to meet full capacity of sixty ACT clients. Although the TMACT offered more in-depth analysis of the program fidelity, moving forward the DACTS will be used to determine and monitor fidelity for CND. The DACTS is the chosen tool in the state of Ohio and does not require specialized training to administer, which proves to be more practical and sustainable for the organization.

Identify Methods for Dissemination

The first goal for dissemination is to publish this DNP project in The Ohio State University Knowledge Bank. The second goal is to write a manuscript highlighting the role of a psychiatric nurse practitioner as a leader in the development and implementation of programs such as ACT in the community mental health programs.

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Appendix

The Treatment of Severe Mental Illness: An Evaluation of Assertive Community Treatment

Levels of Evidence Synthesis Table Template

	1	2	3	4	5	6	7	8	9	10
Level I: Systematic review or meta-analysis	X		X		X		X			
Level II: Randomized controlled trial								X	X	
Level III: Controlled trial without randomization										
Level IV: Case-control or cohort study										X
Level V: Systematic review of qualitative or descriptive studies		X		X		X				
Level VI: Qualitative or descriptive study (includes evidence implementation projects)										
Level VII: Expert opinion or consensus										

LEGEND

1- Dieterich et al. (2017), 2- Fleury et al. (2016), 3-Mueser (2019), 4- Monroe-DeVita (2012), 5- Fries et al. (2011), 6- Marquant et al. (2016),

7- Penzenstadler et al. (2019), 8-Kikkert et al. (2018), 9- Hengartner et al. (2017), 10-Aagaard et al. (2017)

Levels of Evidence Synthesis Table Template

	11	12	13	14	15	16	17	18	19	20
Level I: Systematic review or meta-analysis										
Level II: Randomized controlled trial										
Level III: Controlled trial without randomization										
Level IV: Case-control or cohort study	X	X	X	X	X	X	X			
Level V: Systematic review of qualitative or descriptive studies										
Level VI: Qualitative or descriptive study (includes evidence implementation projects)								X	X	
Level VII: Expert opinion or consensus										X

11- Penkunas et al. (2016), 12-Nugter et al. (2016), 13- Clausen et al. (2015), 14- Schottle et al. (2018), 15- Sood et al. (2014), 16- Harrison et al. (2017), 17- Clausen et al. (2016), 18- Clausen, Landheim et al. (2016), 19- Linz et al. (2016), 20- Addington et al. (2017)

Outcomes Synthesis Table Template

↑↓—(select symbol and copy as needed)	1	2	3	4	5	6	7	8*	9	10
Outcome #1: Service Engagement	↑	–	↑	–	–	–	↑	–	–	–
Outcome #2: Psychiatric Hospital Admissions	–	–	↓	–	–	–	↓	–	↓	↓
Outcome #3: Psychiatric Hospitalization Days	↓	–	↓	–	–	↓	–	–	–	–
Outcome #4: Global Functioning/Quality of Life	↑	–	↑	–	–	–	↑	–	↓	–
Outcome #5: Symptomatology	–	–	↓	↓	–	–	↓	–	↓	–
Outcome #6: Treatment Adherence	–	↑	↑	–	–	–	–	–	–	–
Outcome #7: Alcohol/Substance Use	–	↓	–	↓	↓	–	–	↓	–	–
Outcome #8: Employment	↑	–	↑	–	–	–	–	–	–	–
Outcome #9: Stable Housing	↑	–	↑	↑	–	–	↑	–	–	–
Outcome #10: Incarceration	–	–	–	–	–	↓	–	–	–	–

***Integrated Dual Diagnosis Treatment + ACT**

LEGEND

1- Dieterich et al. (2017), 2- Fleury et al. (2016), 3-Mueser (2019), 4- Monroe-DeVita (2012), 5- Fries et al. (2011), 6- Marquant et al. (2016), 7- Penzenstadler et al. (2019), 8-Kikkert et al. (2018), 9-Hengartner et al. (2017), 10-Aagaard et al. (2017),

Outcomes Synthesis Table Template

↑↓—(select symbol and copy as needed)	11	12**	13	14	15	16	17	18	19	20
Outcome #1: Service Engagement	–	–	–	↑	–	↑	–	–	–	–
Outcome #2: Psychiatric Hospital Admissions	↑	↓	–	↓	–	↓	–	–	–	–
Outcome #3: Psychiatric Hospitalization Days	–	↓	–	–	↓	↓	↓	↓	–	–
Outcome #4: Global Functioning/Quality of Life	–	↑	↑	–	–	–	–	–	↑	↑
Outcome #5: Symptomatology	–	–	–	–	–	–	–	–	–	–
Outcome #6: Treatment Adherence	–	↑	–	–	–	–	–	–	–	–
Outcome #7: Alcohol/Substance Use	–	–	–	–	–	↓	–	–	–	–
Outcome #8: Employment	–	–	–	–	–	–	–	–	–	–
Outcome #9: Stable Housing	–	–	–	–	–	–	–	–	–	–
Outcome #10: Incarceration	–	–	–	–	–	–	–	–	–	–

** Flexible ACT

11- Penkunas et al. (2016), 12- Nugter et al. (2016), 13- Clausen et al. (2015), 14- Schottle et al. (2018), 15- Sood et al. (2014), 16- Harrison et al. (2017), 17- Clausen et al. (2016), 18- Clausen, Landheim et al. (2016), 19- Linz et al. (2016), 20- Addington et al. (2017)